

THE VERVAINS COLLECTED ON THE GALAPAGOS ISLANDS BY CHARLES DARWIN
DURING THE VOYAGE OF THE "BEAGLE"

Harold N. Moldenke

During the course of studies of the Avicenniaceae and Verbenaceae of the Galapagos Islands for Dr. Ira L. Wiggins' projected Flora of these fascinating islands, it soon became apparent that the original collections made by Charles Darwin early in October of 1835 on those islands would have to be re-examined.

Hooker in 1847 [Trans. Linn. Soc. Lond. Bot. 20: 195] identified one of Darwin's collections as "Verbena polystachya H.B.K. var. foliis incis segmentis grossè serratis", although on the actual specimen's label he wrote merely "Verbena polystachya H.B.K. var. ?"

Andersson in 1854 [Vet. Akad. Handl. Stockh. 1853: 199—200] and in 1859 [Galap. Veg. 81] reduced Hooker's proposed variety to synonymy under what he called "Verbena caroliniana Linn.", to which he also reduced V. polystachya H.B.K.

Robinson in 1902 [Proc. Am. Acad. 38: 196] concurred in this reduction, but used Linnaeus' original spelling of V. carolina L. Robinson also gave V. polystachya H.B.K. and "V. caroliniana Anderss." as synonyms of V. carolina. In 1911 Stewart [Proc. Calif. Acad. Sci., ser. 4, 1: 134] also accepted the name V. carolina L. in his work on the flora of the Galapagos Islands.

All these workers cite only an unnumbered Darwin collection from James Island as the basis of the record and there is no evidence that any one of them after Hooker actually examined the original specimen, although an unknown hand did at some time change Hooker's original determination as written on the sheet to "V. urticifolia L. ?" and then to "V. carolina L."

Actually, Verbena carolina is a species known abundantly from southern Arizona and throughout Mexico, extending southward through Guatemala into Honduras and El Salvador. It was not known from anywhere south of these Central American countries except for this Darwin record from the Galapagos.

Similarly, Verbena urticifolia is a very common species in southeastern Canada and the eastern portion of the United States, extending westward into the Dakotas, Nebraska, Kansas, and Texas, but unknown from south of our continental border, although it is known to have been cultivated from time to time in gardens in various European countries.

Through the courtesy and kindness of the botany staff at Cambridge University, in England, I have been able to secure the loan of the original Darwin specimen and find, as suspected, that it does not represent either of these suggested northern species. Rather it is obviously an as yet undescribed variety of the endemic V. sedula Moldenke, described by me in 1955 [Phytolo-

gia 5: 229] from Indefatigable Island, based on Bowman 81, which was also originally misidentified and distributed to herbaria as Verbena carolina.

The new taxon is, therefore, officially described herewith:
VERBENA SEDULA var. DARWINII Moldenke, var. nov.

Haec varietas a forma typica speciei caulis perspicue densiusculeque pilosis recedit.

This variety differs from the typical form of the species in having its stems conspicuously and rather densely long-pilose with antrorsely subtrigose or somewhat divergent hairs. The abbreviated branches, petioles, and lower leaf-surfaces are also quite densely and conspicuously long-pilose and the upper leaf-surfaces sparsely so.

The type of the variety was collected by Charles Darwin on James Island, Galapagos Islands, in the beginning of October, 1835, and is a sheet labeled "3685" in pencil in the herbarium of Cambridge University, originally from the Henslow Museum herbarium.

The second collection by Darwin was identified by Hooker as V. officinalis L., and, again, this identification was apparently copied blindly by Andersson, Robinson, and Stewart in the references cited above.

Verbena officinalis is a very common and widespread European plant which is now almost cosmopolitan as a so-called "weed" in most parts of the world where Europeans have penetrated and settled. Such plants as these, which we call "weeds" in a derogatory fashion, are actually plants which have been able to adjust well to man's civilization, and, like the European starling and house sparrow, the common dandelion, sheep sorrel, and chicory, have greatly benefited by man's ever-expanding occupation of this earth's habitable surface, where to many other species of wildlife, both plant and animal, less able or completely unable to adjust, have perished or are today on the brink of extermination.

Such a plant as Verbena officinalis would be expected to spread through the settled parts of the Galapagos, if it had been introduced there accidentally, as it has in man's other settlements elsewhere in similar climates. However, since it was never collected again in the Galapagos Islands after Darwin's visit, the suspicion naturally arose that Hooker's identification was erroneous and that we were dealing here not with an aggressive European introduction, but with a native and perhaps limited endemic species.

Thanks again to the kindness of the Cambridge University staff, I have also been able to re-examine this Darwin specimen and have found it to represent the native Verbena glabrata var. temuispicata Moldenke described by me in 1967 [Phytologia 14: 283] from nearby Albemarle Island on the basis of Stewart 3317 and later collected on the same island by J. T. Howell as his no. 9007. Darwin found it on James Island.

Five other species of vervain are known to us today from the Galapagos Islands, perhaps overlooked by Darwin because of his preoccupation with the study of the endemic finches, turtles, lizards, and other more striking and conspicuous forms of wild life at the time.

Verbena galapagosensis Moldenke is thus far known only from Albemarle Island and is represented by A. Stewart 3318 (type) and 3319.

Verbena grisea Robinson & Greenm. is known only from Duncan Island and is represented by G. Baur 180 (type) and by A. Stewart 3315 and 3316.

Verbena stewartii Moldenke is known only from Albemarle Island and is represented only by the type collection, A. Stewart 3320.

Verbena townsendii Svenson is apparently endemic to Indefatigable Island, where it is known only from the type collection, Svenson 249.

These, along with the V. sedula Moldenke referred to previously, are all endemic and apparently quite rare. There is, however, an introduced species which is now quite abundant in many parts of the island group and appears to be spreading in the manner of introduced "weeds". This is Verbena litoralis H.B.K., an extremely common and widespread tropical American species, very variable and polymorphic. It is found naturally from Mexico throughout Central and South America, and is now introduced and often pestiferous in parts of the United States [Arkansas, Louisiana, Texas, Oregon, California], Germany, South Africa, the Hawaiian Islands, Australia, Midway, Gambier, Easter, and the Austral Islands. Darwin is reported to have collected it on Charles Island, but I have not as yet seen this collection. Other collections, however, which I have examined are the following: Albemarle Island: J. T. Howell 8959. Charles Island: N. J. Andersson 117; J. T. Howell 8882; Itow 179; A. Stewart 3321, 3322, and 3323; Wiggins & Porter 423. Chatham Island: N. J. Andersson s.n.; Schimpff 132 and 142; A. Stewart 3324. Indefatigable Island: R. I. Bowman s.n.; R. G. Taylor T.T.125; I. L. Wiggins 18508 and 18558.